

South Coast AQMD Activities Related to Electricity Infrastructure

CEC and CPUC Joint Workshop Electricity Infrastructure Issues Resulting from SONGS Closure

July 15, 2013

Fowler Museum, UCLA

Los Angeles, CA



Mohsen Nazemi, P.E.
Deputy Executive Officer
South Coast Air Quality Management District



SCAQMD Objectives

- **Comply with federal and state air quality requirements**
- Keep the lights on /
Help with SONGS Closure
- Protect community health /Minimize Local Impacts
- Support modernization of the grid



SCAQMD Activities During and After 2000-2001 Energy Crisis



- Issued permits for 8,674MW new and repowered generation
- Amended our rules to provide temporary access to SCAQMD internal offset bank (Rule 1309.1)
- Amended our RECLAIM Program to provide flexibility to power plants to operate beyond emission caps
- Issued Executive Orders under SCAQMD Rule 118 to allow temporary emissions exceedances
- Supported CPV Sentinel Power Plant in implementing AB 1318 (SIP revision, clean air projects)
- Facilitated restart of Huntington Beach Units 3&4

Air Permitting in SCAQMD

- All New, Modified or Relocated electricity generating facilities need to obtain a Permit to Construct from SCAQMD
- Corner Stone of air permitting is **New Source Review (NSR) Rules**
- **NSR Purpose** – To ensure that the environment is protected while allowing economic growth
 - **Non-attainment** – Air quality does not worsen in areas where air is currently unhealthy (NA-NSR)
 - **Attainment** – Air quality is not significantly degraded in areas where air is currently clean (PSD)

Main Air Permitting Requirements in SCAQMD



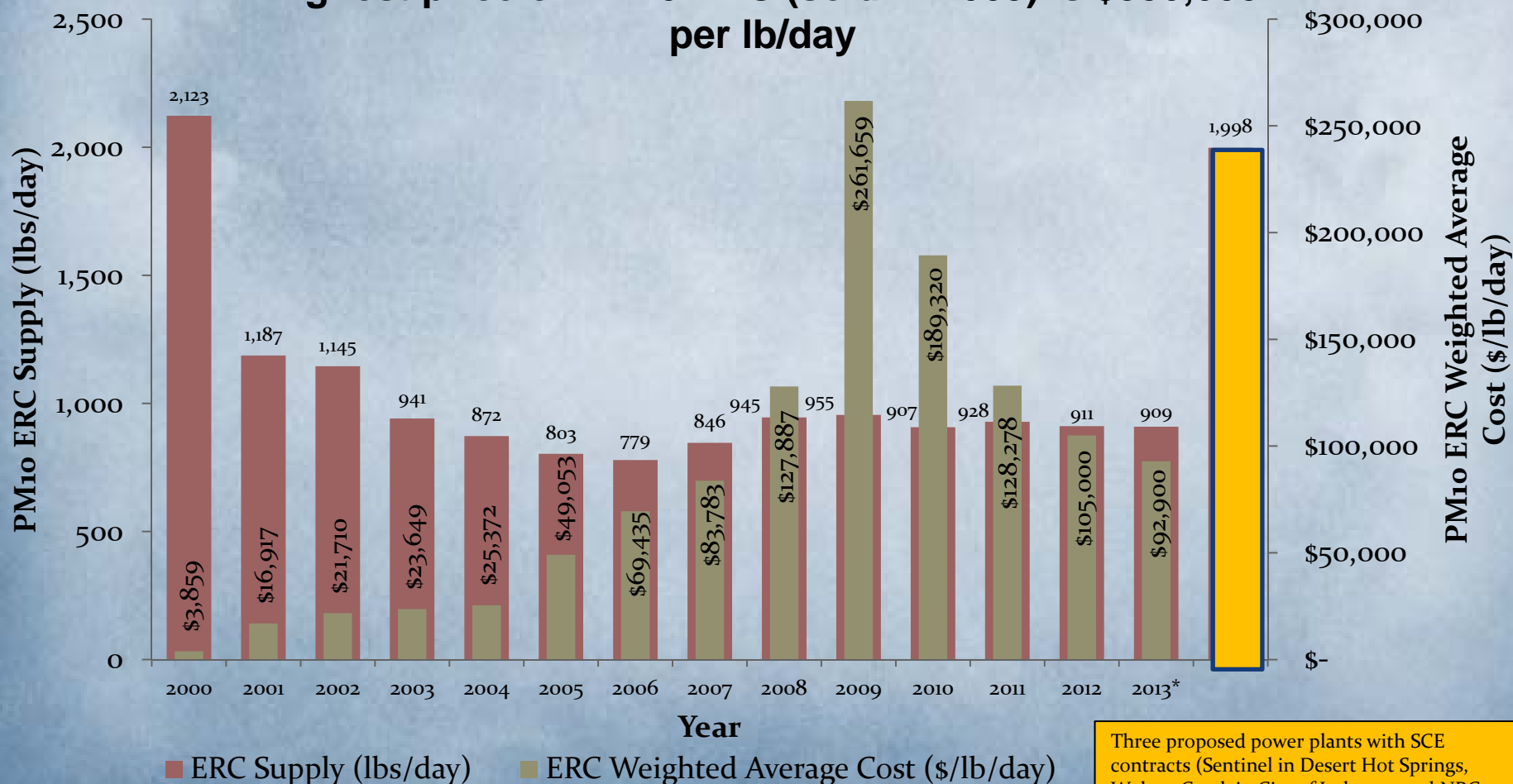
PSD	<ul style="list-style-type: none">• Best Available Control Technology (BACT)• Analysis of impacts on Air Quality, Soil, Vegetation, Visibility, Class I Areas and Endangered Species
Federal NA-NSR	<ul style="list-style-type: none">• Lowest Achievable Emission Rates (LAER)• Air Quality Impact Analysis• Emission Offsets
California State Clean Air Act NSR	<ul style="list-style-type: none">• BACT {H&SC 40440(b)(1)}• No Net Increase (H&SC 40918-40920, 40920.5)
SCAQMD's NSR	<ul style="list-style-type: none">• PSD (Reg. XVII)/ NSR (Reg. XIII, XX)• BACT/ LAER• Air Quality Impact Analysis (Modeling)• Emission Offsets (NA-NSR only)

- **Emission offsets** – unless exempt, emission increases to be offset by the use of ERCs (or RTCs for RECLAIM sources)
- SCAQMD NSR Rules provide exemptions from offset requirements for certain specific sources, however, SCAQMD still provides the required offsets from its internal offset bank:
 - **Rule 1309.1 – Priority Reserve**
 - **Essential Public Services** – Sewage Treatment Plants, Landfills, Police, Fire Fighting, Hospitals, Schools
 - **Electrical Generating Facilities** for a Limited Period
 - **Rule 1304 – Exemptions**
 - Facility Modernizations or Relocations
 - **Utility Boiler Replacements with Gas Turbines**
 - Small Emitting Sources (PTE < 4 TPY)

PM10 ERC Supply & Cost 2000 – 2013*



Supply dropped by 57% since 2000
Cost increased by 2,307% since 2000
Highest price of PM10 ERC (sold in 2009) is \$350,000 per lb/day



*Through April 2013

Three proposed power plants with SCE contracts (Sentinel in Desert Hot Springs, Walnut Creek in City of Industry, and NRG in El Segundo)

NRG El Segundo Repower

NRG El Segundo: 2 combined cycle turbines, total of 572 MW

- NRG files applications with CEC/SCAQMD in 2000
- CEC approves license in 2005 with OTC, but lawsuit is filed
- NRG modifies project in 2007 – OTC is replaced with dry cooling
- **Offsets - R1304 Exemption: Total MW shutdown is 685 MW**
- CEC Amends the license on June 30, 2010
- SCAQMD Permits issued on July 16, 2010
- Start of operation in June 2013



Competative Power Ventures (CPV) Sentinel

CPV Sentinel: 8 turbines, total of 850 MW.

- CPV files applications with CEC/SCAQMD in 2007
- **Offsets - January 2010: Pursuant to AB1318, CPV to obtain offsets for PM₁₀ and SOX from SCAQMD's internal offset bank (\$53 Million for mitigations)**
- CEC approves AFC in December 2010
- EPA Region 9 approves SIP Revisions in April 2011.
- SCAQMD Permits issued on April 15, 2011
- Start of first fire in December 2012



Edison Mission Energy (EME) Walnut Creek Energy

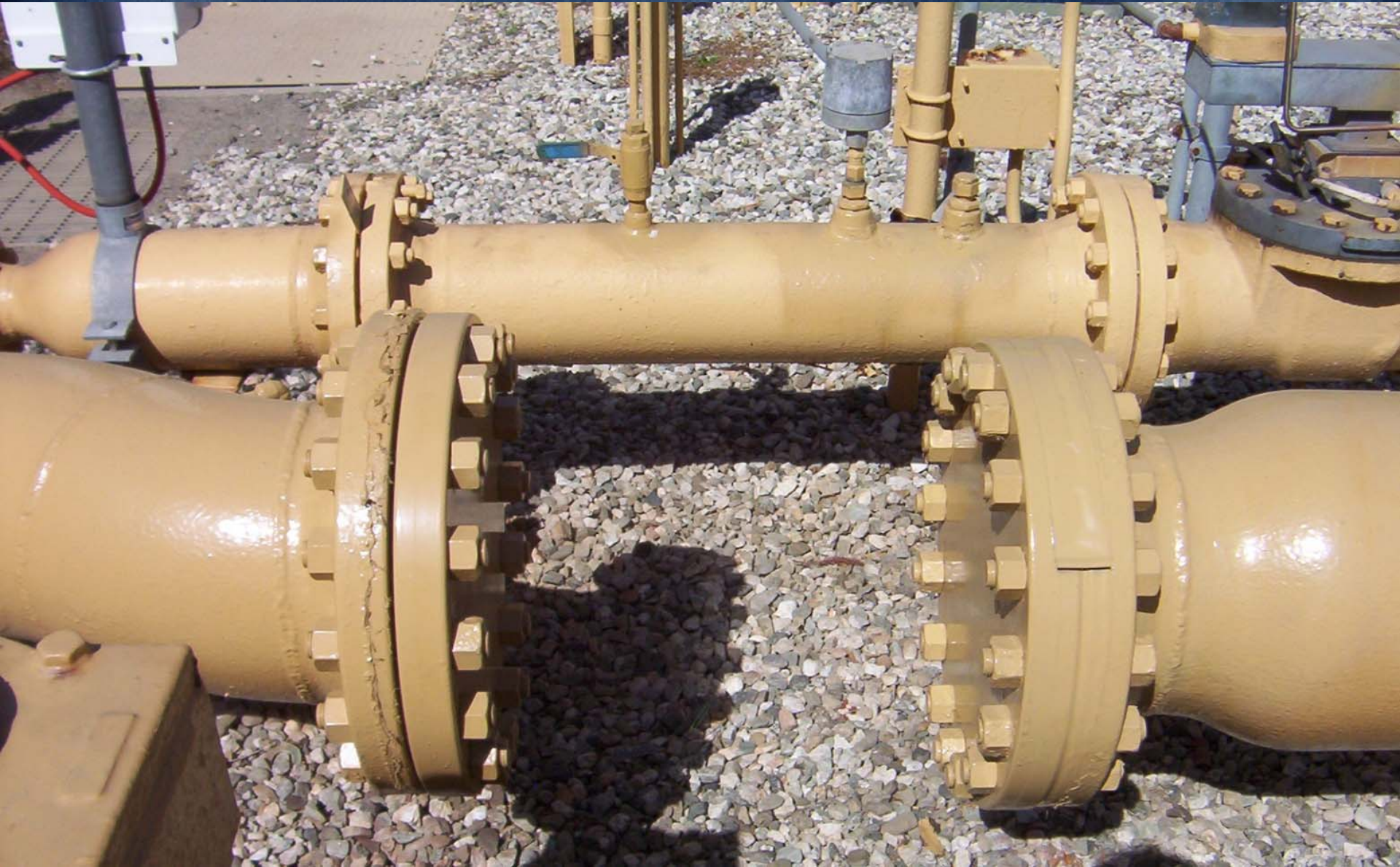


EME Walnut Creek Energy: 5 turbines, total of 500 MW

- EME files applications with CEC/SCAQMD in 2005
- CEC approves license in February 2008.
- **Offsets - May 2011: EME purchased from AES Boilers 3 and 4 at Huntington Beach to retire as offsets**
- SCAQMD permit issued in May 2011
- EME retired HB boilers 3 and 4 in November 2012
- Start of first fire in December 2012



Main Gas Supply Line to HB Units 3 & 4 Cut / Double Flanged



Cut a 3'X4' Section of Boiler Walls on Both Ends



San Onofre Nuclear Generating Station News



San Onofre Nuclear Generating Stations (SONGS) Shutdown

- Since Jan. 2012, SCE has shutdown both SONGS Units 2 & 3
- Total of 2,200 MW lost – Shortfalls in South Orange County & San Diego
- CAISO asked HB Units 3 & 4 to restart in March 2012. Units shutdown in Nov. 2012
- Converted HB **Generators 3 & 4** to Synchronous Condensers (June 2013)



Once-Through-Cooling Generating Units



State Water Resources Control Board Policy

Operator	Facility	Units	Total MW	OTC Replacement Date
AES	Alamitos	Boilers 1-6	1,950	2020
AES	Huntington Beach ¹	Boilers 1,2	430	2020
AES	Redondo Beach	Boilers 5-8	1,310	2020
NRG	El Segundo ²	Boilers 3-4	670	2015
LADWP	Haynes ³	Boilers 1,2 Turbines 9,10	1,081	2029
LADWP	Harbor	Turbines 1,2	364	2029
LADWP	Scattergood ⁴	Boilers 1-3	818	2024
Total			6,623	

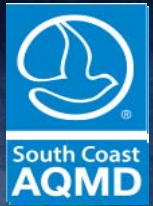
¹ Huntington Beach Boilers 3 & 4 (450MW) shutdown Nov. 2012

² El Segundo Boiler 3 (135MW) shutdown July 2013

³ Haynes Boilers 5&6 (573 MW) shutdown June 2013

⁴ Scattergood Boilers 3 (460 MW) shutdown Dec 2015

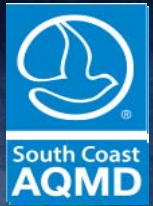
Total Credits Used from SCAQMD's Internal Offset Bank / Proposed Rule 1304.1



FY 2001/2 to CY 2011 (lbs/day)				
Pollutant	Total	Utility Boiler Replacements	Essential Public Services	All other Exemptions
VOC	8,450	1,937(23%)	1,770	4,743
NOx	9,972	0 (0%)	4,937	5,035
SOx	302	150 (50%)	135	17
CO	36,778	20,203 (55%)	4,902	11,673
PM10	4,307	2,914 (68%)	730	663

PM10 Attainment Status

South Coast Air Basin (SCAB)



July 1, 1987	EPA replaces the TSP30 with PM10 NAAQS (Both 24-hr, 150 ug/m ³ , & Annual PM10 Standard, 50ug/m ³)
July 18, 1987	EPA established PM2.5 NAAQS and reuses PM10 NAAQS, but revised PM10 NAAQS are later vacated
October 17, 2006	EPA retains the 24-Hr PM10, but revokes the Annual PM10 NAAQS effective December 18, 2006
January 13, 2013	EPA again retains the original 1987 24-Hr PM10 NAAQS
January-2010	SCAQMD Board approved PM10 Redesignation Request (2008-2010) and submitted to ARB
April-2010	ARB approves the request & submits it to EPA
June 26, 2013	EPA approves SCAQMD's Redesignation Request and declares SCAB as attainment for PM10

NSR Reg. XIII – Offset Requirement



Rule 1303 (b)

The Executive Officer or designee shall, except as Rule 1304 applies, deny the Permit to Construct for any new or modified source which results in a net emission increase of **any nonattainment air contaminant** at a facility, unless each of the following requirements is met:

(2) Emission Offsets

(A) Emission Reduction Credits

Unless exempt from offsets requirements pursuant to Rule 1304, **emission increases shall be offset by either Emission Reduction Credits** approved pursuant to Rule 1309, or by allocations from the Priority Reserve in accordance with the provisions of Rule 1309.1, or allocations from the Offset Budget in accordance with the provisions of Rule 1309.2.

NSR Reg. XIII – Offset Requirement

(cont'd)



Rule 1301 (d) State Standards

For the purpose of this regulation, all references to the national ambient air quality standards and nonattainment shall be interpreted to include state ambient air quality standards.

This subsection shall not be included as part of any revision to the District's portion of the State Implementation Plan (SIP).

Rule 1302

(z) **NONATTAINMENT AIR CONTAMINANT** means any air contaminant for which there is a national or state ambient air quality standard, or precursor to such air contaminant, which:

(1) has been designated "nonattainment" pursuant **to the California Air Resources Board** in accordance with Section 39607 of California Health & Safety Code; or

(2) has been designated "nonattainment" pursuant to final rulemaking **by the EPA as published** in the Federal Register. 9

No Net Increase Requirements

Rule 1301 (a) Purpose

This regulation sets forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards, and that future economic growth within the South Coast Air Quality Management District (District) is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors.

Health & Safety Code 40920.5

Each district with extreme air pollution shall, to the extent necessary to meet the requirements of the plan developed pursuant to Section 40913, include the following measures in its attainment plan: (a) All measures required for moderate, serious, and severe areas. (b) A stationary source control program **designed to achieve no net increase** in emissions new or modified stationary sources of nonattainment pollutants or their precursors. (c) Any other feasible controls that can be implemented, or for which implementation can begin, within 10 years of the adoption date of the most recent air quality plan.

Protect California Air Act of 2003



- Signed into law September 22, 2003 and effective January 1, 2004 in response to Federal NSR changes (H&SC 42500-42507)
- Places restrictions on changes local air district can make to their NSR Rules
- In August 2004, ARB develops SB288 Guidance Document suggesting SB288 also applies to offsets



Health & Safety Code 42504

- (a) No air quality management district or air pollution control district may amend or revise its new source review rules or regulations to be less stringent than those that existed on December 30, 2002. If the state board finds, after a public hearing, that a district's rules or regulations are not equivalent to or more stringent than the rules or regulations that existed on December 30, 2002, the state board shall promptly adopt for that district the rules or regulations that may be necessary to establish equivalency, consistent with subdivision (b).

Health & Safety Code 42504

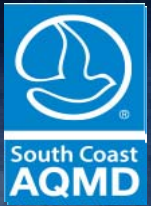
- (b) (1) In amending or revising its new source review rules or regulations, **a district may not change any of the following that existed on December 30, 2002**, if the amendments or revisions would exempt, relax or reduce the obligations of a stationary source for any of the requirements listed in paragraph (2). **(BACT & Modeling are, but Offsets is not listed)**

Status of PM₁₀ Offset Requirements



- EPA has Re-designated SCAB as Attainment with PM₁₀-NAAQS
- SCAQMD NSR Rule still requires offsets since SCAB is Non-attainment with State PM₁₀ Standard
- California Clean Air Act “No Net Increase” potentially requires offsets for state purposes
- Protect California Air Act of 2003 (SB288) may prevent SCAQMD from amending its NSR Rules to change the offset requirements

SCE Announced Permanent Shutdown of SONGS on June 7, 2013



Current Activities



- Member of LA Basin/San Diego Loss of SONGS Task Force
- High priority on issuing power plant permits
- Using power plant fees to reduce local community impacts
- Proposed Rule 1304.1 fees for Repowering / Addressing stakeholder issues re Rule 1304.1 fees
- Evaluating Post-attainment PM₁₀ emission offset strategy